

University of Groningen

Robustness of shape descriptors and dynamics of learning vector quantization

Ghosh, Anarta

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2007

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Ghosh, A. (2007). *Robustness of shape descriptors and dynamics of learning vector quantization*. [Thesis fully internal (DIV), University of Groningen]. [s.n.].

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Publications

Journal Papers (Published):

1. Anarta Ghosh and Nicolai Petkov – *Robustness of Shape Descriptors to Incomplete Contour Representations*, IEEE Transactions on Pattern Analysis and Machine Intelligence. Vol. 27, No. 11, pp. 1793-1804, Nov. 2005.
2. Anarta Ghosh, Michael Biehl and Barbara Hammer – *Performance Analysis of LVQ Algorithms: A Statistical Physics Approach*, Neural Networks, special issue on Advances in Self-Organizing Maps. Vol. 19, pp. 817-829, 2006.
3. Michael Biehl, Anarta Ghosh and Barbara Hammer – *Learning Vector Quantization: The Dynamics of Winner-Takes-All Algorithms*, Neurocomputing. Vol. 69, pp. 660-670, 2006.
4. Anarta Ghosh and Nicolai Petkov – *A Cognitive Evaluation Procedure for Contour Based Shape Descriptors*, International Journal of Hybrid Intelligent Systems, Special Issue. Vol. 2, No. 4, pp. 237-252, 2006.
5. Anarta Ghosh and Nicolai Petkov – *Effect of High Curvature Point Deletion on the Performance of Two Contour Based Shape Recognition Algorithms*, International Journal of Pattern Recognition and Artificial Intelligence. Vol. 20, No. 6, pp. 913-924, 2006.

Journal Papers (Accepted With Minor Revision):

1. Michael Biehl, Anarta Ghosh and Barbara Hammer – *Dynamics and Generalization Ability of LVQ Algorithms*, Journal of Machine Learning Research.

Conference Proceedings:

1. Nicolai Petkov and Anarta Ghosh – *Recognition of Objects with Incomplete Representations*, In Proceedings of Advanced Concepts for Intelligent Vision Systems

- (ACIVS'04). pp. 91-95, Brussels, Belgium, Aug. 31-Sept. 3, 2004.
2. Anarta Ghosh and Nicolai Petkov – *GAP Test: A Cognitive Evaluation Procedure for Shape Descriptors*, In Proceedings of Fourth International Conference on Hybrid Intelligent Systems (HIS'04). pp. 334-339, December 05-08, 2004, Kitakyushu, Japan.
 3. Michael Biehl, Anarta Ghosh and Barbara Hammer – *The Dynamics of Learning Vector Quantization*, In Proceedings of 13th European Symposium On Artificial Neural Networks (ESANN'05). pp. 13-18, Bruges (Belgium), 27-28-29 April 2005.
 4. Anarta Ghosh, Michael Biehl and Barbara Hammer – *Dynamics of LVQ Type Learning Rules*, In Proceedings of 5th Workshop On Self-Organizing Maps. WSOM'05, pp. 587-594, Paris, University Paris 1, Panthion-Sorbonne 5th-8th September 2005.
 5. Anarta Ghosh and Nicolai Petkov – *Incomplete Contour Representations and Shape Descriptor: ICR test studies*, In Proceedings of 1st International Symposium on Brain, Vision and Artificial intelligence. (BV&AI 2005). 19-21 October, 2005, Palazzo Serra di Cassano Naples, Italy. Lecture Notes in Computer Science, Vol. 3704, pp. 416-425, 2005.

Technical Report:

1. Anarta Ghosh, Michael Biehl, Agnes Freking and Georg Reents – *A Theoretical Framework for Analysing the Dynamics of Learning Vector Quantization: A Statistical Physics Approach*, Technical Report: 2004-9-02; Institute of Mathematics and Computing Science, University of Groningen P.O.Box. 800, 9700 AV Groningen, The Netherlands.

Posters:

1. Michael Biehl and Anarta Ghosh – *Supervised and Unsupervised Vector Quantization: A Solvable Model*, 69th Annual Meeting of the Deutsche Physikalische Gesellschaft.
2. Michael Biehl, Anarta Ghosh and Aree Witoelar – *Dynamics of LVQ Algorithms*, Scientific ICT Research Event The Netherlands (SIREN 2005).